CLAIMS

What is claimed as new and desired being secured by Letter Patent of the United States is:

1. Method of defense-in-depth ultrasound intrusion detection that establishes the purposeful interrelation of various techniques of ultrasound intrusion detection with the aim to ensure an early and anticipatory defense-in-depth intrusion protection throughout a multi-echelon and dome-shaped volumetric space around a surveyed critical installation.
2. Method as defined in Claim 1 wherein the whole of protected dome-type volumetric room around a critical installation is being arranged in several juxtaposed areas, which areas are being defined as interrelated echelons of an entire defense-in-depth intrusion detection space.
3. Method as defined in Claim 2 wherein the geometrical shapes and dimensions of said 2-D curvilinear or 3-D curved surface areas are being put in correspondence to the spatio-temporal parameters of air-borne ultrasound propagation, the presumptive spatio-temporal behavior of an intruder or trespasser, as far as to the available capabilities of covering all the said surfaces with the appropriate stationary or scanning ultrasound beam patterns during surveillance.
4. Method as defined in Claims 2 and 3 wherein a proper graphic-analytical model of intrusion vulnerability for each echelon is being composed with regard to the options of supposed spatio-temporal purposeful behavior of intruder or trespasser, which graphic-analytical model is being used for verifying geometrical shape and dimensions of every echelon of said entire defense-in-depth intrusion detection space.
5. Method as defined in Claims 1, 2 and 3 wherein the appropriate technique of ultrasound intrusion detection for each of said echelons is being chosen and assigned regarding the type of ultrasonic beam responding, i.e. reflection, refraction and interference, which types of ultrasonic beam responding are being respectively selected in compliance with previously composed graphic-analytical models of intrusion vulnerability for each surveyed echelon.
6. Method as defined in Claims 1 and 4 wherein the generalized graphic-analytical model of intrusion vulnerability for entire protected dome-type volumetric room around a critical installation is being composed, which model is being created with the aim to establish an operatively reliable and functionally correct signal-processing interrelation amongst different adjacent echelons based on the principle of early and anticipatory ultrasound

detection of ingress or aggress intrusion thereinto.

7. Method as defined in Claims 1 and 6 wherein the diversity of hardware and software of all techniques of ultrasound intrusion detection involved is being minimized with the aim of consequent assembling the mutual set of instruments and prepare the appropriate software for logically exhaustive the defense-in-depth intrusion detection signal processing.